Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

molar is wanting, or perhaps occasionally present of very small size, in the upper jaw; present but very small in the lower. In the dog the third molar is usually absent in the upper, present in the lower jaw, but quite numerous cases have been found in which it was present in the upper jaw. Wortman and Matthew have held that the modern representative of Temnocyon is Cyon of India, which is little more than a subgenus of Canis; but as Mr. Hatcher remarks, this is problematical. Cyon is principally distinguished by the absence of the last lower molar, which would indicate that it is more specialized than Canis proper; the same character occurs as an aberration not rarely in the domestic dog and several wild species of Canis. It is to be remarked that the genus (Icticyon) which shows the greatest reduction of the molars (to one above and two below) is a native of South America. The top of the skull in Protemnocyon is flat in lateral view; in the coyote it is more elevated, while in the domestic dog it is strongly convex; these changes no doubt accompanying a progressive development of the brain, though partly the result also of enlarged frontal air-sinuses. In Temnocyon the absence of the third molar in the lower jaw suggests Cyon rather than Canis proper, but it does not seem impossible that this molar might be lost and recovered again (contrary to the doctrine of some), considering the comparative frequency of an extra (fourth) molar in the lower jaw of the common dog. However, while Temnocyon stands nearer to Canis than does Protemnocyon, both in time and by the auditory bullæ, it may still be a little out of the direct line.

T. D. A. C.

Parker on the Hearing of Fishes.[1] — Professor G. H. Parker gives an account of his studies of the sense of hearing in fishes. Taking the common Killifish, *Fundulus heteroclitus* as the subject of experiment, he shows that this fish does actually hear sounds which may be made by means of tuning forks, and that it becomes deaf on cutting the auditory nerve. It is possible that fishes of other species may be actually insensible to sounds as experiments of others have seemed to show, and in all fishes the ear may be in part an organ of equilibration.

It is of course not likely that any fish has the power to make fine discriminations in sounds.

---

[1] Parker, G. H. Hearing and Allied Senses in Fishes. *Bull. U. S. Fish Com. for 1902*, pp. 45–64, pl. 9.

The lateral line is closely associated with the air, and may also assist at hearing. The ear is an outgrowth from the tubes of the lateral line. As Professor Parker aptly observes, in the skin, the lateral line and the ear, "we are dealing with what may be called three generations of sense organs: the skin representing the first generation and giving rise to the lateral line organs, the second, which in turn produce the ears."

D. S. J.

Parker on the Optic Nerves of Flounders.[1]— In the bony fishes, the optic nerves pass to the optic lobes of the brain, the one passing to the lobes of the opposite side simply lying over the other, without intermingling of fibres, such as takes place in the higher vertebrates and in the more primitive fishes.

According to Parker's observations, in ordinary bony fishes, the right nerve may be indifferently above or below the other. In 1000 specimens of ten common species, 486 have the left nerve uppermost and 514 the right nerve. In most individual species, the numbers are practically equal. Thus, in the haddock, 48 have the left nerve uppermost and 52 the right nerve.

In the unsymmetrical Teleosts or flounders, and soles, this condition no longer obtains. In those species of flounder with the eyes on the right side, 236 individuals representing sixteen species had the left nerve uppermost in all cases.

Of flounders with the eyes on the left side, 131 individuals representing nine species all have the right nerve uppermost.

There are a few species of flounders in which reversed examples are so common that the species may be described as having the eyes on the right or left side indifferently. In all these species, however, whether dextral or sinistral, the relation of the nerves conforms to the type, and is not influenced by the individual deviation. Thus the stony flounder (Platichthys) belongs to the dextral group. Fifty normal specimens, the eyes on the right, have the left nerve dorsal, while the left nerve is also uppermost in 50 reversed examples with eyes on the left. In 15 examples of the California bastard halibut (*Paralichthys californicus*) normally sinistral, the right eye is always uppermost. It is uppermost in 11 reversed examples.

---

[1] Parker, G. H. The Optic Chiasma in Teleosts and its Bearing on the Asymmetry of the Heterosomata (Flat Fishes) *Bull. Mus. Comp. Zoöl.*, Vol. XL, No. 5, pp. 221–242, 1 pl.